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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,934	03/30/2001	Tetsuya Mizuguchi	09792909-4796	8307

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EXAMINER

DAVIS, DAVID DONALD

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 03/23/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/822,934

Applicant(s)

MIZUGUCHI, TETSUYA

Examiner

David D. Davis

Art Unit

2652

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
4a) Of the above claim(s) 19-28 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-18 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Art Unit: 2652

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

2. Claims 19-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention and species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 4, received February 2, 2004.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-18 rejected under 35 U.S.C. 102(e) as being anticipated by Gill et al (US 6,654,211). As per claims 1 and 10, Gill et al shows in figure 12 a magnetoresistance-effect

Art Unit: 2652

element including a magnetism-sensing section 204 the electric resistance of which changes in accordance with an external magnetic field. Gill et al also shows in figure 12 a low-resistance metal layer 232 contacting the magnetism-sensing section 204. Gill et al additionally shows in figure 12 an oxide layer 234 provided on that surface of the low-resistance metal layer 232, which faces away from the magnetism-sensing section 204.

As per claims 2 and 11, Gill et al discloses that the low-resistance metal layer 232 is made of copper. As per claims 3 and 12, Gill et al discloses that the oxide layer 234 contains material that oxidizes the element constituting the low-resistance metal layer. As per claims 4 and 13, Gill et al shows in figure 12 that the magnetism-sensing section 204, a pinned layer 202 the direction of magnetization of which is fixed by an anti-ferromagnetic layer 212, and a nonmagnetic metal layer 200 interposed between the magnetism-sensing section 204 and the pinned layer constitute a spin-valve film.

As per claims 5 and 14, Gill et al shows in figure 12 that at least the anti-ferromagnetic layer 212, the pinned layer 202, the nonmagnetic metal layer 200, the magnetism-sensing section 204, the low-resistance metal layer 232 and the oxide layer 234 are provided on a substrate 76, laid one upon another in the order mentioned. As per claims 6 and 15, Gill shows in figure 12 that a protective layer 236 is formed on the oxide layer 234. As per claims 7 and 16, Gill et al discloses that at least the oxide layer 234, the low-resistance metal layer 232, the magnetism-sensing section 204, the nonmagnetic metal layer 200, the pinned layer 202 and the anti-ferromagnetic layer 212 are provided on a substrate, one laid upon another in the order mentioned.

Art Unit: 2652

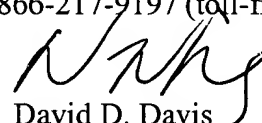
As per claims 8 and 17, Gill et al shows magnetism-sensing sections 204 and nonmagnetic metal layers are alternately laid, forming an artificial lattice film, and the low-resistance metal layer 232 contacts the outermost magnetism-sensing section 204. 9. As per claims 9 and 18, Gill et al discloses a total thickness of the low-resistance metal layer 232 and oxide layer 234 ranges from 0.5 nm to 1.5 nm. See column 6, lines 9-25 of Gill et al.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Davis whose telephone number is (703) 308-1503. The examiner can normally be reached on Monday thru Friday between 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


David D. Davis
Primary Examiner
Art Unit 2652

ddd